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Land
Evaluation

and

Site
Assessment



United States
Department of
Agriculture

Soil
Conservation
Service

Fort Worth,
Texas

United States
Department of
Agriculture



National Agricultural Library

AGRICULTURE

Land

Evaluation and

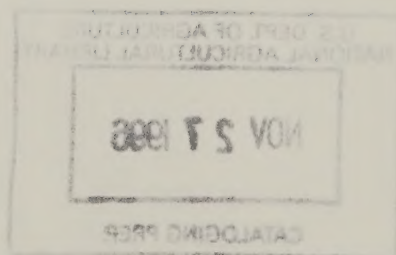
Site _____

Assessment

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CATALOGING PREP.



PART I —

Land

Evaluation

**Uses soil surveys to determine quality of
agricultural land**

PART II —

Site

Assessment

**Rates sites for agricultural capability and
additional factors**

Implementation

PART I - Land Evaluation

LOCAL COMMITTEES

- 1. District Conservationist - Coordinator**
 - A. Soil Scientist**
 - B. Assistance from Area, State, NTC Staff as needed**
- 2. County Planner**
- 3. Extension Advisor**
- 4. SWCD Board Representative**
- 5. Academic People**
- 6. Person Knowledgeable of Local Soils**

Implementation

PART II - Site Assessment

LOCAL COMMITTEES

- 1. County Planner - Coordinator**
- 2. District Conservationist**
- 3. Member of County Board or Planning Commission**
- 4. Realtor and/or Developer**
- 5. Anyone who has an interest and knowledge at the local level on land use planning**

DEVELOPMENT OF SYSTEM

- System is developed at the level where it will be used.
- A local work group is organized to facilitate the development of the system.
- The system is a tool to aid decision-makers. It does *not* take away the power of local officials to make land use decisions.

OBJECTIVES OF THE SYSTEM

- **Facilitate protection of farmland by decisionmakers, including landholders, developers, state and local planners, and governing officials.**
- **Implement national and state farmland protection policies.**

SYSTEM DESIGN

- 1. Defensible**
- 2. Applied consistently from case to case**
- 3. Flexible to accommodate differences among states, areas, or counties**
- 4. Based on existing knowledge**
- 5. Protects the integrity of National Land Evaluation and Classification Systems**

USE OF THE SYSTEM

- 1. Determine appropriate use of state or federal funds where important farmland is involved**
- 2. Land use planning**
- 3. Agricultural site and area viability assessment**
- 4. Agricultural land tax assessment**
- 5. Purchase and transfer of developments rights**
- 6. Environmental impact assessments related to agricultural land**
- 7. Water and natural resource project planning**
- 8. Planning of sewage, water, and transportation systems**
- 9. Planning agricultural districts**
- 10. Implement farmland protection policies and regulations**
- 11. Determine size of farm units to be included in agricultural programs**
- 12. Determine minimum lot size in agricultural district**

AGRICULTURAL LAND EVALUATION

- ***Definition: Agricultural Land Evaluation is the process of rating soils of a given area and placing them into groups ranging from the best suited to the poorest suited to agricultural purposes.***
- **Agricultural land consists of:**
 - **Cropland and Pastureland**
 - **Forest land**
 - **Rangeland**

CROPLAND EVALUATION

Cropland Evaluation Methods:

- Soil potentials
- Soil productivity
- Land capability classification
- Important Farmland classification

RANGELAND EVALUATION

Rangeland Evaluation Methods:

- Potential productivity
- Potential plant community
- Erosion potential
- Ecological status

FOREST LAND EVALUATION

Forest Land Evaluation Methods:

- **Productivity rating**
- **Species rating**
- **Slope rating**
- **Soil or other management limitations**

LE PART — LAND EVALUATION

Step No. 1 -- Obtain Soil Survey Computer Printout

Farmland Criteria Table

**Instructions for obtaining found in
National Bulletin 340-2-2
and
National Bulletin 340-3-2
Exhibit B**

INFORMATION NEEDED TO GENERATE FARMLAND CRITERIA TABLES

County/MLRA

Indicator crop

Min AWC NIRR

Min AWC IRR

Temperature

Moisture

C factor

Irrigation water available

AGRICULTURAL LAND EVALUATION

LIST OF SOIL SERIES AND EVALUATIONS

COUNTY AND STATE MATHEWS COUNTY, VIRGINIA MLRA 153-B
 INDICATOR CROP(S) CORN
 MINIMUM REQUIRED AWC WITHOUT IRRIGATION 4 CLIMATIC "C" FACTOR .05
 MINIMUM REQUIRED AWC WITH IRRIGATION 2.5 TEMPERATURE REGIME THERMIC
 IRRIGATION WATER AVAILABLE: YES NO X MOISTURE REGIME UDIC

SOIL SERIES AND CLASS DETERMINING PHASE	LAND CAP. CLASS AND SUBCLASS	INDICATOR YIELD				AWC WITHIN 40 INCHES	PH WITHIN 40 INCHES
		UNITS/ACRE	INDEX	NR	IRR		
KEMPSVILLE, 0-2%	1	150	100			4.4 - 6.8	4.5 - 5.5
KEMPSVILLE, GRAVELLY 0-2%	1	115	77			2.8 - 4.4	4.5 - 5.5
RUMFORD, 0-2%	1	100	67			3.1 - 4.9	3.6 - 6.5
SASSAFRAS, 0-2%	1	130	87			4.4 - 8.6	3.6 - 5.5
KEMPSVILLE, 2-6%	2E	145	97			4.4 - 6.8	4.5 - 5.5
KEMPSVILLE, GRAVELLY 2-6%	2E	110	73			2.8 - 4.4	4.5 - 5.5
KEYPORT, 2-5% SL	2E	100	67			5.9 - 7.7	3.6 - 5.0
KEYPORT, 2-5%	2E	110	73			6.5 - 8.3	3.6 - 5.0

LIST OF SOIL SERIES AND EVALUATIONS

COUNTY AND STATE _____
 INDICATOR CROPS(S) _____
 MINIMUM REQUIRED AWC WITHOUT IRRIGATION _____
 MINIMUM REQUIRED AWC WITH IRRIGATION _____
 IRRIGATION WATER AVAILABLE: YES _____ NO _____
 MLRA _____
 CLIMATIC "C" FACTOR _____
 TEMPERATURE REGIME _____
 MOISTURE REGIME _____

SALINITY 40 INCHES MMHO/CM	SODIC	DEPTH TO:		WET	FLOOD FREQ	EROSION			PERM SLOWEST W/IN 20 INCH	FRAC 3 IN SURF	PRIME FARMLAND
		PAR/ ROCK	WATER TABLE			WATER K	2K	WIND 60/1			
-	N	60	6.0	N	NONE	.32	6.3	0.70	2.0	0-1	YES
-	N	60	6.0	N	NONE	.24	8.3	0.70	2.0	0-1	NO
-	N	60	6.0	N	NONE	.17	11.8	0.45	2.0	0	NO
-	N	60	6.0	N	NONE	.28	7.1		0.6	0	YES
-	N	60	6.0	N	NONE	.32	6.3	0.70	2.0	0-1	YES
-	N	60	6.0	N	NONE	.24	8.3	0.70	2.0	0-1	NO
-	N	60	1.5-4.0	N	NONE	.43	4.7		.06	0	NO
-	N	60	1.5-4.0	N	NONE	.43	4.7		.06	0	NO

Step No. 2 -- Check Prime Farmland Designation of Farmland Criterial Table

Check against state list

Document any differences

2

MLRA

CLIMATIC "C" FACTOR

TEMPERATURE REGIME

MOISTURE REGIME

YES

Map symbol	Soil series	Slope	Land cap. class & subclass	Important farmland determination	Production ind. soil potentials		Acres		Agricultural Group
					Local	SCS-5	No.	%	
1	2	3	4	5	6	7	8	9	10

Step No. 3 -- Prepare Worksheet 1

Arrange by

FIRST— Capability

SECOND— Important Farmland
designation

THIRD— Productivity index or soil
potential index

Step No. 4 -- Determination of Agricultural Groups

Array in about 10 groups

Consider in grouping the combination of

- Capability
- Important Farmland designation
- Productivity index

Avoid combining groups of Important
Farmland

Step No. 5 -- Prepare Worksheet 2

**Record of decisions made in preparing
agricultural groups**

AGRICULTURAL EVALUATION WORKSHEET 2 DESIGN OF LAND EVALUATION FOR AREA

COUNTY _____

STATE _____

AGRICULTURAL GROUP	LAND CAPABILITY	IMPORTANT FARMLAND	POTENTIAL OR PRODUCTIVITY	PERCENT	ACRES	RELATIVE VALUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

Step No. 6 -- Determine Weighted Average Yield For Each Group

$$\text{Yield} \times \text{Acreage of each soil} \div \text{Total acreage in group}$$

Example

<u>Soil</u>	<u>Yield</u>	<u>Acreage</u>	<u>Product</u>
Ab	40 bu	x 1,000	= 40,000
Bc	30 bu	x 2,000	= 60,000
Wc	40 bu	x <u>1,000</u>	= <u>40,000</u>
		4,000	140,000

$$\frac{140,000}{4,000} = 35 \text{ bu Weighted Average}$$

Step No. 7 -- Adjust Yields

**Class 1— No adjustment
needed**

**Class II and above— Adjust to account for
cost of conservation
measures**

ADJUSTING YIELDS

Document for Each Agricultural Group—

- **Name of each soil**
- **Kind of limitation**
- **Kinds of practices needed
to overcome limitations**
- **Annual costs of applying practices**
- **Annual maintenance costs**
- **Land loss caused by installing
practices**

* * * * *

Costs of applying practices, maintenance costs, and land loss are converted to yield loss --- thus adjust yields

Step No. 8 -- Prepare Worksheet 3

Adjusted yield for group

divided by

Highest adjusted yield

equals

relative value

AGRICULTURAL EVALUATION WORKSHEET 3

DETERMINING RELATIVE VALUE

COUNTY _____ STATE _____

VALUE GROUP (1)	ADJUSTED YIELD FOR THE GROUP DIVIDED BY THE HIGHEST ADJUSTED YIELD (2)	PRODUCT OF RELATIVE YIELD (3)	TIMES 100 (4)	RELATIVE VALUE (5)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Step No. 9 -- Eureka!

**Turn worksheets 1, 2, and 3 over to
SA Committee**

File documentation

Go for coffee!

AGRICULTURAL SITE ASSESSMENT SYSTEM FOR PROPOSED LAND USE CONVERSIONS

SITE ASSESSMENT FACTORS

- 1. Percentage of area in agriculture**
- 2. Land use adjacent to site**
- 3. Size of farm**
- 4. Agricultural support system**
- 5. Zoning**
- 6. Availability of less productive land**
- 7. Need for additional land**
- 8. Compatibility with comprehensive development plans**
- 9. Distance to urban area**
- 10. Central water-distribution system**
- 11. Central sanitary sewerage system**
- 12. Investment for urban development**
- 13. Transportation**
- 14. Compatibility of proposed use with surrounding existing land uses**



Site Assessment Committee

Site Assessment Factors for County

I Agricultural Land Use

- A. Percent of land in agriculture (1½ miles)
- B. Percent in agriculture adjacent to site
- C. Percent of site in agriculture

II Zoning

- D. Percent of land zoned agriculture (1½ miles)
- E. Availability of zoned land

III Compatability/Impact of Use

- F. Distance from city/village
- G. Environmental impact
- H. Compatability with surrounding area
- I. Impact on historical/cultural features

IV Urban and Rural Infrastructure

- J. Transportation accessibility
- K. Availability of central sewer
- L. Agricultural support systems

V Land Use Feasibility

- M. Soil suitability for onsite disposal
- N. Size on site

VI Adopted Plans

- O. Consistency with county plan
- P. Consistency with municipal plan

Site assessment subtotal

Ag evaluation subtotal

Total points accrued

Total points possible

1	Maximum Points
2	Assigned weight
3	Total maximum points x weight
4	Site No. 1 points assigned
5	Points x weight
6	Site No. 2 points assigned
7	Points x weight



Site Assessment Committee

Site Assessment Factors for County

VI Adopted Plans

- O. Consistency with county plan
- P. Consistency with municipal plan

1	Maximum Points	
2	Assigned Weight	
3	Total Maximum Points x Weight	
4	Site No. 1 Points Assigned	
5	Points x Weight	
6	Site No. 2 Points Assigned	
7	Points x Weight	



Site Assessment Committee

Site Assessment Factors for County

V Land Use Feasibility

M. Soil suitability for onsite disposal

N. Size of site

1	Maximum Points	
2	Assigned Weight	
3	Total Maximum Points x Weight	
4	Site No. 1 Points Assigned	
5	Points x Weight	
6	Site No. 2 Points Assigned	
7	Points x Weight	



Site Assessment Committee

Site Assessment Factors for County

IV Urban and Rural Infrastructure

- J. Transportation accessibility
- K. Availability of central sewer
- L. Agricultural support systems

1	Maximum Points	
2	Assigned Weight	
3	Total Maximum Points x Weight	
4	Site No. 1 Points Assigned	
5	Points x Weight	
6	Site No. 2 Points Assigned	
7	Points x Weight	



Site Assessment Committee

Site Assessment Factors for County

III Compatability/Impact of Use

- F. Distance from city/village
- G. Environmental impact
- H. Compatability with surrounding area
- I. Impact on historical/cultural features

1	Maximum Points	
2	Assigned Weight	
3	Total Maximum Points x Weight	
4	Site No. 1 Points Assigned	
5	Points x Weight	
6	Site No. 2 Points Assigned	
7	Points x Weight	



Site Assessment Committee

Site Assessment Factors for County

II Zoning

D. Percent of land zoned agriculture
(1½ miles)

E. Availability of zoned land

Maximum Points	1	
Assigned Weight	2	
Total Maximum Points x Weight	3	
Site No. 1 Points Assigned	4	
Points x Weight	5	
Site No. 2 Points Assigned	6	
Points x Weight	7	



Site Assessment Committee

Site Assessment Factors for County

I Agricultural Land Use

- A. Percent of land in agriculture (1½ miles)
- B. Percent in agriculture adjacent to site
- C. Percent of site in agriculture

1	Maximum Points	
2	Assigned Weight	
3	Total Maximum Points x Weight	
4	Site No. 1 Points Assigned	
5	Points x Weight	
6	Site No. 2 Points Assigned	
7	Points x Weight	

C: Percent of site in agriculture

B: Percent in agriculture adjacent to site

A: Percent of land in agriculture (1/4 miles)

1. Agricultural Land Use

Site Assessment Factors for County

Site Assessment Committee



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